

### Section 3-2: The Graph of $y = mx + b$

**Warm-up:** Solve for  $y$ .

1.  $3y = 9x - 12$

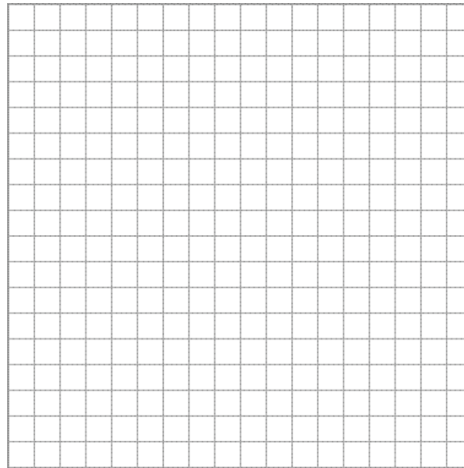
2.  $200x + 500y = 300x - 400y + 1000$

3.  $\frac{1}{2}x + \frac{1}{3}y = \frac{1}{4} + x$

4.  $2x - y = 3x + y$

*Example 1:* State the slope and  $y$ -intercept of each line and graph them

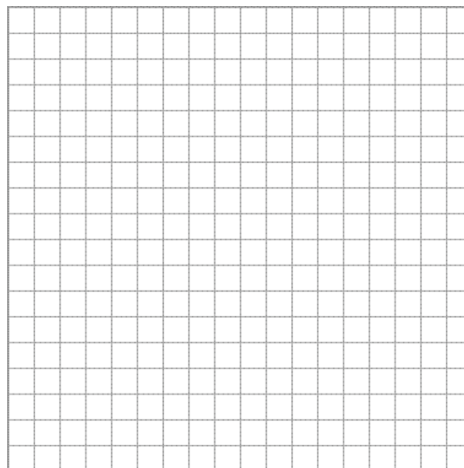
a.  $y = 2x - 3$



b.  $y = -\frac{2}{3}x + 1$

Check your graphs by using your graphing calculator.

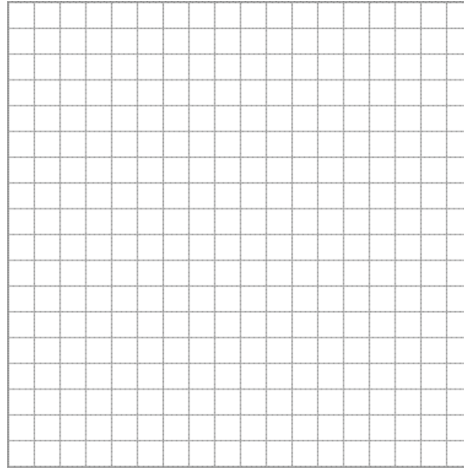
*Example 2:* Graph  $3y = 2x - 15$ .



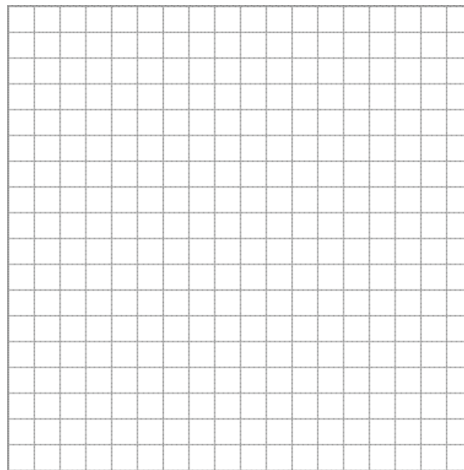
*Equation for a horizontal line:*

*Equation for a vertical line:*

*Example 3:* Graph  $y = -4$  and  $x = 2$ .



*Example 4:* Graph  $y = \frac{2}{3}x - 2$  and  $y = \frac{2}{3}x + 3$ .



*Theorem:*

*Theorem:*

*Homework:*

**"The idea of perfect closes your mind to new standards.. When you drive hard toward one ideal, you miss opportunities and paths, not to mention hurting your confidence. Believe in your potential and then go out and explore it; don't limit it." - John Eliot, Ph.D.**